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ABSTRACT

This planning conference was one in a series of such conferences aimed at providing continuous guidance for the development of the National Longitudinal Study of the High School Class of 1972 (NLS) a study designed to discover what happens to young adults after they leave high school, and to relate this information to earlier educational experiences and personal or biographical attributes. The topics under discussion at this conference were analysis plans for the second and third follow-up data. The panel recommended that: (1) descriptive data should be made available to users in a timely fashion; (2) the contractor should have more explicit guidance on research priorities for the project; (3) analysis planning seminars should be funded to focus attention on analysis issues; (4) contract monitors should provide more assistance with analytical problems; (5) the merging of data from NLS, the census, the Higher Education General Information Surveys (HEGIS), and the Dictionary of Occupational Titles should be explored; and (6) several areas should be considered for additional data collection. (Author/BW)

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RTI

Final Paper from the Panel

TM006 857

November, 1975

Walter R. Howard

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National Longitudinal Study Planning Conference

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Background

Staff members of the Research Triangle Institute (RTI) and the National Center for Educational Statistics (NCES) met with an eight member panel October 1-3, 1975 to examine the third follow-up field test questionnaire and to develop goals, priorities, and recommendations for the third follow-up and second follow-up data analyses. A listing of the panelists is contained in Appendix A, and a detailed description of the purposes of the planning conference is included in Appendix B.

During the conference at Chapel Hill, North Carolina, copies of the third follow-up questionnaire were collected from each panel member on which his comments, suggestions, and concerns were identified. These materials were made available, by this procedure, to RTI staff members who are assigned responsibility for the final version of the third follow-up instrument. It was also agreed that the panel would leave, at the conclusion of the conference, a list of recommendations endorsed by the panel as a group. These were delivered to RTI at our final session and will be included in this paper, along with some additional explanations.

Although one member has not sent his final materials for inclusion in this paper, initial comments from the planning conference will be used as appropriate in presenting a composite view of analysis problems and suggestions.

As chairman of the panel, it is my intention to present helpful suggestions from the panel members without doing too much violence to the ideas of the individual authors. Sincere appreciation is expressed to the panelists, to the Research Triangle Institute, and to the National Center for Educational Statistics for their cooperation and assistance.

General Objectives of NLS

On September 9, 1975, Collins, Eckland, and Talbert, in a paper entitled "Third Follow-Up Field Test Background and Supportive Statement" prepared for NCES reviewed the objectives of NLS in these words:

"In the most general terms, the primary purpose of the study is to discover what happens to young adults after they leave high school, as reflected in their subsequent educational and vocational activities, attitudes, and aspirations, and to relate this information back to earlier educational experiences and personal or biographical attributes. The ultimate goal of the program is a better understanding of the growth of students in the American educational system, and the factors associated with individual educational and career outcomes. Two major consequences of such information are envisioned: (1) the planning and implementation by educational policymakers of programs to enhance educational opportunity and achievement and to upgrade occupational attainment; and (2) the extension of current knowledge of human development for the communities of educators and educational researchers in general.

The policy orientation then is fairly clear; the potential uses for the information being gathered are many. The study should provide substantive data for the review and reformulation of the diverse federal policies and programs within the Office of Education,

where various units have contributed to its formation and development, and continue to influence its course. These units include the National Center for Education Statistics; the Office of Planning, Budgeting, and Evaluation; the Bureau of Postsecondary Education; and the Bureau of Occupational and Adult Education. The potential uses for the information to be accumulated, however, exceed the interests of any particular group; the broad data base and succession of observed effects will serve many interests of other governmental agencies, the educational research community, and the education community in general."

Second Follow-Up

Members of the panel expressed various concerns about the "Analysis Plans for the Second Follow-Up Survey Data." Ed McDill was impressed by the program of research outlined by the RTI documents. He offered these suggestions:

1. First, with regard to the conceptual model on p. 11 and the operationalization of it on pp. 12-14, I would raise the following questions.
 - (a) The measurement of "job prestige" (p. 13, B.c.1) is of dubious face validity. Why were these particular items selected as indicators of "job prestige"?
 - (b) I suspect there is transcription error in the items subsumed under the "Community" and "Family" goal orientation variables (p. 13, B.b.2 and 3). Specifically, should the items B.Y.Q. 20G and B.Y.Q. 20I apply to the concepts to which they are attached?
 - (c) Why are occupational and educational plans omitted from the list of output variables to be studied (p. 13)?
 - (d) Why is the status composition of the high school to be measured by aggregating the characteristics of the 18 respondents in a school rather than by information provided in the School Questionnaire? More generally, what is the extent of error introduced by aggregating

student traits to characterize the institutions they attend? This is an important question and probably should be the subject of a "methodological study".

- (e) I question the advisability of employing a composite measure of family SES (C.a., p. 15) which masks the importance of the individual variables in the composite. The separate effects of status background indicators are of interest in their own right.

- 2. Beginning on p. 18 and intermittently thereafter, the intended use of stepwise regression as an analytic strategy is indicated. I have reservations about the informative value of this technique and see little to recommend its use given the explicit causal models which are presented throughout these documents and the fact that path analysis is better suited to exploit their potentialities. Given the likely severe collinearity on several of the predictor variables (e.g., academic ability, SES, academic performance) stepwise regression in the absence of a guiding theoretic framework can produce quite discrepant results depending on the order in which the predictor variables are entered.
- 3. The suggested comparisons with Project Talent data described on p. 26 should be quite instructive. However, certain procedural details merit consideration.

- (a) First, I note that you propose to classify students according to their quartile placement on both the ability and SES indices. I question the advisability of employing relative scores in such inter-study comparisons. I think it quite likely, for example, that youth in the lowest SES quartile in the NLS sample will, on the average, be of higher status than those in the corresponding quartile in the Project Talent study. (That is, the SES distributions of American high school students have changed between 1961 and 1972.) Hence, the comparison might be quite misleading.
- (b) Second, it has frequently been observed that the distribution of scores among cells in complex cross-tabulations is at least partially constrained by the marginal distributions on the variables employed in the cross-classification. In comparing the results of one population with another (e.g., Project Talent vs. NLS), simple inspection of percentage distributions does not adequately adjust for population differences in the marginal distributions. Recent developments in the log linear analysis of multivariate contingency tables probably merit your consideration in this

analysis. (For an exposition of this technique see James A. Davis "The Log Linear Analysis of Survey Replications" in Kenneth Land and Seymour Spilerman (eds.) Social Indicator Models Russell Sage Foundation, pp. 75-104; and James A. Davis, "Hierarchical Models for Significance Tests in Multivariate Contingency Tables: An Exegesis of Goodman's Recent Papers" in Herbert L. Costner (ed.), Sociological Methodology 1973-74, Jossey-Bass, pp. 189-231.)

Jerry Bachman's reactions to the "Analysis Plans for the Second Follow-Up Survey Data" are listed next:

1. I very much agree with the suggestion (on p. 2) that an executive summary be prepared to cover highlights of the four reports.
2. I also agree with the suggestion (on p. 3) that composite variables be measured as they were in the past in order to insure consistency. Give a rather low priority to confirmatory analysis and/or longitudinal factor analysis to determine stability of factor structure. Our own work on self-esteem in the Youth in Transition study indicates a great deal of stability; thus, it probably makes some sense to move to other things, and do the stability checks much later, if at all.

3. I agree with the plan (on p. 4) to include any item in no more than one composite measure.

4. In the "Policy- or Issue-Oriented Analyses" section (beginning on p. 10) there is considerable detail about "school effects" analyses--i.e., those analyses which attempt to show that some schools (because of "climate," resources, or some other kinds of factors) are more effective than others. I'm very pessimistic about the outcome of such analyses.

My pessimism is based on extensive analyses of the Youth in Transition data which failed to show any consistent and meaningful school effects--well, hardly any. The recent issue of Harvard Education Review presents Jencks' reanalysis of TALENT data showing little evidence for school effects on cognitive outcomes; and our own findings in the so-called non-cognitive areas are equally dismal.

If, nonetheless, you intend to go on with the effort to discover the impact of different high school experiences, let me offer a suggestion or two. One thing you might do is add educational and occupational plans/aspirations to the student outcome dimensions (Box "B" in Figure 1 on p. 11). More important, I'd suggest that you begin your analyses (as soon as you have constructed and "cleaned" your student outcome dimensions) by looking to see if the outcome

dimensions are clustered according to school. In other words, can you account for much variance in student outcomes simply by knowing what school a student comes from? For those dimensions that show no tendency at all to cluster by school, my guess is that you can stop right there. The only exception is the rather exotic kind of cancelling effect when two school characteristics tend to go together but have opposite effects, but even then the effect of each variable should not be wholly cancelled by the other.

In those instances when you do find some clustering by school (e.g., percent going on to college, etc.), the next step should be to look at your control variables (Box "C" in Figure 2, p. 18). If controlling them removes the clustering by school, then you have to decide whether to take, what is in my view, the more parsimonious approach that individual differences and family background account for the school clustering (especially since it is well known that family background factors do indeed cluster by school). Only for those student outcome dimensions which pass through this sort of screening is it necessary to try to measure school characteristics which might account for the differences. My guess is that there will be little enough

variance attributable to schools that it will not be worth the effort to try to figure what it is about the schools which explains those small differences.

A further caution about a different sort of school effect--or schooling effect--is in order based on our experience with Youth in Transition data. You will almost certainly find differences between those who do and do not go on to college. And there will be further differences related to the amount of college, the type of college, and other things. I would be very cautious about attributing those differences to post-high school experiences until you have looked at the same measures taken when the respondents were seniors in high school. Our own experience is that we find differences at the end of high school, or five years after, but when we track them back through time we find that the differences were there just as strong (or stronger) at the start of tenth grade (the point of our first data collection). Since your NLS data go back only to the end of the senior year in high school, one of your problems will be that you will see differences at that point which are linked to high school experiences such as being in the college preparatory program. Your data won't tell you whether such differences were the result of being

in that program, or were something which preceded (and perhaps helped determine) entry into that program.

5. One other comment is a rather specific one. On p. 25 it is stated that the model shown in Figure 3 is "for respondents who entered postsecondary education." In fact, however, the criterion variable is postsecondary education, and if that variable is to be allowed to vary, you must include all respondents in the analysis--not just those who entered further education. (I assume it was just a misleading statement in the text; if not, I suspect you would have discovered the problem very quickly in the analysis.)
6. One other point that I, along with others, made during the planning conference may be worth repeating here. I think that there are a number of analysis areas in which people are going to try to make causal inferences. I'm not talking about the analysts but rather about the consumers of the information. We are all familiar with the very simple-minded conclusions which can sometimes be drawn from simple correlations. I think the more sophisticated modelling has its own kinds of limitations--especially if one commits himself to a single causal interpretation and forces the data to fit it. However, I don't think for that reason that we should shrink from all modelling, because the alternative approach--simple reporting of

relationships with no attention to controlling prior causes, etc.--is much worse. In this case I think the motto should be: "The perfect is the enemy of the good." We won't do a perfect job of causal analyses, but we can do a somewhat good job--particularly if we limit those efforts to the areas where the promise for payoff is greatest.

Larry Gladieux's comments on the Second Follow-Up Analysis are described next in his own words:

One suggestion here is simply to encourage consideration of the problems of transfer students, particularly from two to four year institutions and particularly focusing on the question of financial aid availability. The data from the fall '74 follow up should make possible comparisons between financial aid awards to transfer students in four year institutions and non-transfer students in the same institutions from similar financial backgrounds. The series of questions I have suggested for the third follow-up I hope will get at the question of students who wanted to transfer but were discouraged because of the lack of financial aid. (This issue is one that we (College Entrance Examinations Board) may be able to deal with in our NCES contract).

My general feeling about the second follow-up analysis is that timelines--getting descriptive data out to the research community and policy-makers as rapidly as possible--is more important than spending a lot of time elaborating analytical models and trying to specify causality. I think the priority should be on getting the basic descriptive data into the stream of policy data at an early date. Let's not sit on the data pending the development of timely tuned research models.

Analysis Plans for Third Follow-Up Data

Ed McDill addressed himself specifically to the Analysis Plans for the Third Follow-Up in these words:

I now direct my comments to the analysis plans described in "Third Follow-Up Field Test Background and Supporting Statement."

1. The analysis team is properly concerned about the consequences of changing economic conditions on the results for analysis of occupational success. (See p. 31 of the document.) Perhaps year of entry into the labor force should be included as a variable or set of dummy variables to control for effects of changing economic conditions.
2. The study of cross-lagged effects regarding activity states (p. 41) should be quite important. I would recommend expansion of this line of inquiry in one or both of the following respects.
 - (a) The implied correlated error terms among contemporaneously measured activity states should be computed. This would permit assessment of the extent to which correlations among activity states at any one point in time are accounted for by their mutual dependency upon common antecedent influences.

- (b) Attempts should be made to specify causal models in which the reciprocal influences of contemporaneous activity states upon one another could be estimated. These reciprocal influences could not be determined through the use of Ordinary Least Squares methods. Instead, an analytic technique such as Indirect Least Squares regression would have to be employed. Stated otherwise, the feasibility of estimating a non-recursive model should be explored. (See Linda Waite and Ross Stolzenberg, "Intended Childbearing and Labor Force Participation of Young Women: Insights from Non-recursive Models" for an application of a nonrecursive model to a similar substantive problem.) On p. 42 the authors suggest the use of a cross-lagged model to analyze the relationship between educational attainment and self-esteem. I hope this line of inquiry would be extended to include the relationship between educational attainment and locus of control.
- (c) Regarding entry to postsecondary school which is mentioned on p. 42, I would hope that the analysis of entry into college and postgraduate school would be considered merely as a point of departure. In addition to attendance vs. non-attendance it would also be important to distinguish among the following: attendance at vocational and technical schools vs. academic

institutions; two-year community college programs vs. four-year programs; enrollment in four-year institutions of varying levels of quality of selectivity; as a matter of special interest for minority youth, attendance at predominantly black colleges vs. predominantly white institutions; and finally, part-time enrollment vs. full-time enrollment for any and all of these types of institutions.

General Comments and Reactions to Analysis Plans

Most of the panelists addressed themselves to general concerns for analysis and did not limit their remarks to either the second follow-up or the third follow-up data. A study of these comments will show some areas of agreement, some divergent viewpoints, and a healthy sprinkling of advice.

Secondary Data Sources -- Ed McDill

- (1) First, among the research objectives outlined in the various documents presented to us are included an interest in evaluating the importance of selected resources of the secondary school for respondents' subsequent educational, socio-psychological, and labor force outcomes and in examining the processes by which students gain access to various types of postsecondary institutions. In these research contexts, school characteristics are employed as both independent and dependent variables. The School Questionnaire provides information about various characteristics of the secondary schools attended by NLS respondents (SES composition, quantity of schooling, racial composition, educational credentials of staff, size of library, laboratory facilities) while selected self-reported information regarding postsecondary institutions is elicited in the follow-up instruments. I would suggest, however, that these postsecondary data are woefully inadequate for examining either the issue of access to postsecondary education or the impact

of postsecondary institutions upon their students. It would be highly desirable to supplement the information already available on college characteristics with additional data available through various secondary sources. Without presuming to be exhaustive, the utility of information such as the following should be self-evident: academic quality of institution attended (For useful information on "selectivity" or quality of tertiary institutions see Alexander W. Astin, Who Goes Where to College? Chicago: Science Research Associates, Inc., 1965.,, resources available to institution in terms of both hardware and staff, size of institution, racial composition, denominational affiliation, program offerings, etc. Such data would reflect the diversity among postsecondary institutions and permit a much more adequate assessment of many issues regarding access to college than would otherwise be feasible. Similarly, these data would provide a firm basis for evaluating the consequences of attendance at institutions qualitatively different from one another on these characteristics.

- (2) Second, I would refer you to the school effects model diagrammed on p. 18 of the document entitled General Analysis Plans for the NLS Second Follow-Up Survey Data. This diagram is a schematic representation of the input, throughout, output model commonly employed in the study of school effects. It will be noted that among the control variables listed therein are included community characteristics, and their inclusion is

quite proper. However, it is my impression that relatively little information is actually available in the data set that pertains to community characteristics. I would suggest that serious consideration be given to supplementing the meager information already available on community characteristics with data obtainable from the Census Bureau and other federal agencies such as income levels, racial composition, educational level, percent disadvantaged, occupation of head of household, and selected information on local labor market conditions (unemployment rates, prevailing wage rates, and labor force composition). These data on labor market conditions would supplement the information already available in the NLS on vocational training and educational preparation in the consideration of the postschool labor force experiences of respondents. Data already available speak only to the supply of skills but not the demand for them.

- (3) Additional Job Characteristics -- A major analytic interest in working with the NLS data involves consideration of various rewards of work, in particular earnings and occupational status. However, there are other attributes of jobs which are also important returns on labor force participation and whose dependency on educational and vocational preparations would be an additional topic of interest. In order to permit consideration

of these issues I would strongly recommend that the NLS data be supplemented with information from the Dictionary of Occupational Titles on the following job characteristics: specific vocational preparation, general educational demands, pleasantness of work, and the extent to which the job involves work with ideas, people, and things. Such information would allow NLS data to be used to address a variety of questions relevant to manpower policy and utilization of human resources.

Data File Construction -- Ernst Stromsdorfer

It is proven econometric fact that imputation of missing observations for independent variables creates unknown biases in your regression coefficients for any multivariate analytical model. Thus, you trade one unknown bias due to non-response for another unknown bias due to imputation. If you absolutely cannot keep your hand out of the cookie jar and are compulsively impelled to impute missing observations, then these must be tagged as such and the actual values for the variable must also be on the tape and appropriately identified. This is a non-negotiable demand.

The components of all index numbers such as the SEI should also be on the tape.

Selected post-secondary variables from HEGIS should be on the tape. Common I.D. numbers between HEGIS and NLS should be on the NLS tape.

Use HEGIS I.D. numbers. If the numbers are different, then change them now!

Analysis -- Ernst Stromsdorfer

RTI should put out basic descriptive analysis of the data. Say, four separate reports on White and Non-white males and females where these basic variables, plus ability and college - non-college measures are cross-classified against activity measures and selected psychological measures.

Use no step-wise regression. This is mindless number crunching. Start one's analysis with models of behavior, however imperfect they may be. This ensures that some minimal forethought is taken before number crunching begins. Also, I heard a lot of talk about looking at zero-order correlation matrices. This kind of analysis is stone-age stuff.

Career Education and NLS Analyses -- Bob Wise

The NLS data will allow us to find an answer, at a descriptive level, for what happens to students after they leave high school. I assume that a variety of analyses will be recommended and carried out to investigate the patterns of post-graduation education and work activities and the transitions from one to the other. Student and school variables will be studied to see which ones are associated with various activity states and activity state transitions. The

general thrust of these analyses will be to analyze school effects on general educational and occupational outcomes (occupational attainment, level of education, job satisfaction, income, etc.) for various subpopulations.

I would like to present another area for investigation. My remarks assume that education can contribute to the career development of individuals, and the analyses discussed below would increase our understanding of the nature and significance of that contribution, and in turn what we might do to increase it.

The notion that career development proceeds through a quasi-orderly sequence of educational and occupational decision is implicit and pervasive in the literature on career development. Whether the career development process is assumed to be driven by need, self concept fulfillment, or as the expression of personality, the process itself is conceived as one of making choices and taking actions based on those choices.

Attention to the decision process within career development has been emerging for some time now, and it is now at a point where researchers can focus their interests on collecting new data as well as making refinements in their conceptualization of the decision-making process.

There are two related processes which need to be studied and explained through basic and applied research. The first, the career development

process, has received a great deal of theoretical and empirical attention while the second, the career decision-making process, has received some theoretical attention and only limited empirical study. The career development process is generally viewed as continuous and lifelong, while the career decision-making process is viewed as the making of particular choices which over time appear as a sequence of decisions comprising the backbone of an individual's career development pattern.

NLS gathers four types of data that have a direct bearing on career planning: it asks about plans and goals, it asks about reasons for activity state transitions (changing major or withdrawing from school), it asks about influences on plans and transitions, and it asks about resources used in making career-related choices. I will discuss these four types of data in two groups below--Plans and Attainments, and Reasons and Resources in Planning.

Plans and Attainments -- Bob Wise

The first analysis under this topic would be to identify the variations in types of educational and occupational plans at each point in the survey for each population. A first step in this direction has been taken in the analyses of the immediate educational plans of the students in spring of 1972. Where data on goals, aspirations, expectations are obtained later, this analysis could be repeated.

Subsequent analyses could look at changes in educational or occupational plans over time. In the same way that the survey now identifies activity states and activity state transitions, it could identify plan/choice/goal states and their transitions. For each subpopulation, the persistence or modifications in educational/occupational plans could be identified.

Finally under this topic, the relationship between attainment and plan states could be described for each subpopulation. A first step in this direction has already been taken in earlier analyses of factors relating to plan fulfillment. But studying the relationship between plans and attainments can include more than plan fulfillment. Plan fulfillment posits that an individual has a plan and that we can generate a variable that represents the degree to which subsequent attainments match the plan; this is an important analysis, but looks at the relationship between plans and attainments in only one direction. The reverse relationship can also be studied; it can be called plan adjustment, and it looks at changes in plans as a result of attainments. A variable could be generated which represents the degree to which a later plan state does not match an earlier attainment state, and this variable could be analyzed by subpopulation.

In summary, the analyses above look at descriptions of types of plans, descriptions in changes in plans over time, and the reciprocal relationship between plans and attainments.

Reasons and Resources in Planning -- Bob Wise

The survey asks students, at various points when they have indicated that they have changed an activity state (changed their major, withdrawn from school, a job), why they made the change. For each type of activity state, at each point in the survey, the range of reasons could be analyzed, and presented by subpopulation. This range of reasons could be interpreted in terms of their relationship to educational experiences; that is, whether an educational experience or school-based resource was responsible for the change.

The next set of analyses should consider the perceived influences that students report regarding their educational/occupational plans. There are several places in the survey where the respondent is asked to identify how important each of a set of factors is in determining his or her plans. The set includes a variety of factors; previous experience, peer influence, real opportunity, and a list of work values. It would be important in this analysis to identify the type of influence that is referred to by each response category, and to analyze them by groups. For example, among the value responses, what is the distribution across subpopulations? Among the external family peer influences, what is the distribution of responses?

The final set of analyses under this topic is concerned with the resources that respondents used or would have used if available in

making an educational or occupational decision. Items such as the one asked of respondents who got on-the-job training about the assistance received in job placement is an example of the data that could be analyzed here. If items are included that obtain data on whether respondents were aware of resources for career planning in school or at work, whether they took advantage of these resources, and whether these resources were helpful are the basic sorts of questions that would identify areas of needed attention if the career planning process after graduation is to be improved.

Other Analyses Relating to Career Planning -- Bob Wise

The above discussion considers the several variables addressed in a descriptive fashion, and understands that most of the above analyses require cross tabulations of the data from two or more items, in some cases at one point in the survey and in other cases across intervals in the survey. Another set of analyses would involve treating these variables as dependent variables so as to determine the effects of school variables on them. In essence, this is a proposal to include "choice states" along with "activity states" in the analyses of school effects that were mentioned earlier.

Also, the effects of post high school experience on the several dependent variables associated with plans and planning could be assessed. For example, the time spent in post secondary institutions could be analyzed for its relationship to types of plans, changes in plans, and relation between plans and attainments.

Use of Multiple Forms -- Jerry Bachman

I'd strongly urge (and I think the panel will concur) that in the full-scale data collection in October 1976, there be up to four or five different forms of the questionnaire. The forms should be identical through the first 80-90% of the material, but the last few pages should be different. These final pages should be reserved primarily for new measures--especially in the "personal characteristics" category--that do not require a full-scale sample of nineteen to twenty thousand respondents. Some repeated measures that might otherwise be dropped due to their relatively low priority could also be placed in these final pages (on just one form).

The major advantage of using multiple forms is that more new material can be tried out (at an analysis level, not just in small-scale pre-tests) than would otherwise be possible. An additional advantage is that in some areas questions can be asked in different ways in different forms and the analysis results can be contrasted--not with a view toward eventually finding the single "best" set of measures but rather with an emphasis on the several different legitimate ways of learning about a given area. (The "Monitoring the Future" study contains numerous examples of alternate items for getting at a given topic area.)

A disadvantage of multiple forms involves greater printing and processing costs. However, these costs--especially the processing ones--are greatly reduced if the bulk of the material in the several forms is the same.

Use of Retrospective Items -- Jerry Bachman

Retrospective questions should be developed to gain insight into how the respondents now feel about their secondary schooling. Was there sufficient preparation for college or work experiences? How do they feel now, after several years, about the programs in which they participated as high schoolers? (Gene Glass and Walt Howard also raised this point.)

Need for Data on Mexican-Americans -- Walt Howard

In Texas we need to know as much as possible about Mexican-American populations as well as Blacks. Although Chicanos are listed as one of the ethnic groups, I saw and heard very little about them in discussions about analyses.

Availability of Data -- Walt Howard

Tapes containing the NLS data and general procedures to be followed in obtaining the tapes should be publicized to research and policy-making groups throughout the nation. Wider use of the NLS materials is desirable and essential. Plans for dissemination should be reviewed, and updated regularly.

One group - the State departments of education - should have descriptive data as quickly as possible so that efforts in program design, planning, and evaluation could benefit from the latest findings. If additional longitudinal studies are anticipated, states need adequate lead time to plan for and implement expanded state-level studies in conjunction with the national studies.

Retrospective Items -- Walt Howard

We are keenly aware of the lack of information on how well secondary school programs are serving pupils. We are very hopeful that NLS will help shed light on the results and effects of schooling. Did vocational programs help young people find and hold satisfying jobs?

For this reason, some retrospective questions seem to be in order for the questionnaire. We really ought to know if, after four years, the class of 1972 has any feelings about how useful, helpful, and appropriate their secondary schooling really was to them in working, pursuing a degree, etc.

Conceptual Models to Guide Analyses -- Walt Howard

Analysis plans for both the Second Follow-Up and the Third Follow-Up should be based on thoughtfully developed conceptual models which have been exposed to a variety of "experts" and to careful review. To what extent do the models described by RTI reflect a consensus of educational researchers from a variety of backgrounds? Do the economists, sociologists, and others concur with the view of the world as described by the models? Given opportunities to study the models and to question the staff, would other experts find ways to strengthen and improve the analysis plans?

U. S. Office of Education officials responsible for NLS contracts will be called upon to communicate with the increasing number of contractors a clear understanding of the analysis models upon which the study is based and the issues/policies being addressed.

Suggestions from David Mundel

1. Concentrate the effort of the analytic staff initially on descriptive work, e.g., using the data to describe the flow of youth with different characteristics among educational and work activities following high school - and familiarization with previous and ongoing analytic studies - e.g., those by NCES/NLS first follow-up contractors.
2. The school effects analysis should be largely limited to determining the role of high school curriculum types (academic, vocational education) in determining post high school work and school experiences. Efforts to study the impact of high school on either achievement or attitudes are unlikely to be either successful or useful.
3. Efforts should be begun to create estimates of labor market phenomena and non-collegiate training availabilities for the NLS high school communities. The efforts should either be retrospective to allow merger with the NLS-72 Sample (e.g., like that proposed by S. Dretch) or prospective to allow coupling with the proposed NLS-78 sample.
4. Serious consideration should be given to timing future NLS studies so that they correspond closely with census years.
5. Given the recession which has occurred between the second and third follow-ups I would add several detailed questions about unemployment, job search processes, receipt of unemployment and

- welfare benefits, and participation in countercyclical employment and training activities (e.g., public service employment)
6. I doubt that many of the attitudinal questions will be either useful in analysis or be used much--i.e., actually processed!
 7. I would, however, ask respondents some questions about the factors they considered in making school-to-school, job-to-job, and school-to-job (or vice versa) decisions. Our theories on high school to college transitions are reasonably well developed but these other transitions are much less well understood.
 8. I would seriously consider shortening the questionnaire and taking advantage of the possibility to use multiple forms to survey subsamples in order to utilize NLS resources for the activities outlined in #3 (above).
 9. In a further effort to establish priorities among questions I would meet with each of the current contractors who are using the NLS first year follow-up data. They should be asked to establish which of the questions in the third follow-up they might utilize in continuing to work on their problem area and which additional questions they might want to utilize if they were added to the instruments.

Some Questions or Issues that are Important for Policy Makers --
Dave Mundel

1. descriptive flow of youth from high school to postsecondary education, work, military, etc.

- A. descriptions help understand possible sizes and orientations of programs (e.g., do young workers use public employment service)
- B. location of possible new and continuing problems (ex. Project Talent Cross Tab...)
- i) rates and patterns of enrollment
 - ii) work experiences
 - iii) labor market entry issues
 - iv) are utilization rates of programs low or are the number of kids we think to be in school overestimated (BEOG, 57-59%)
 - v) post college, training, work yields - wages and unemployment
 - vi) transition from school to work and around these aspects of life

2. Understanding the impacts of policy instruments (cause-effect modeling)

- . high school program type may influence post-secondary behaviors (expansion of vocational education/career education involvement)
- . role of higher education subsidies in influencing student behavior (size and distribution of financial aid resources)
- . role of training (of all types) in determining work experiences
- . patterns of continuation and attrition in higher education - especially two to four year transitions and delayed entry-into-college (redesign of institutional sector during contraction)

Addressing Causal Questions -- Gene Glass

The momentum generated by site visit teams and this conference is leading toward addressing causal questions with non-experimental data. Our techniques are not equal to the task. The sociologist with his path diagrams and the economist with his structural equations run aground in the same shoals: they cannot solve the perennial problems of (1) "other" variables not controlled, (2) the ambiguous directionality of cause-and-effect that lurks in the correlation coefficient, or (3) the undercorrection of partial correlations due to measurement error. NLS will lose credibility in policy circles if it dispenses recommendations based on questionable techniques. No responsible critic will dispute the thoroughness and representativeness of the NLS survey design, but many will question whether it can produce defensible causal claims.

Stressing that NLS is a Study of Secondary Schools -- Gene Glass

A fundamental point is frequently lost in the cross-fire of advice. NLS is a study of secondary schools. The survey design was constructed around secondary schools. As a survey of four-year college students, NLS would be regarded by most statisticians as having inadequate sample size for answering most questions, since probably fewer than 2,000 subjects in the cohort will graduate from college. The sixty or so military personnel in the sample will obviously tell us nothing about military life. As a study of the labor force, NLS is deficient

in a most significant respect; it does not include the 20-30 percent of young adults who dropped out of secondary school before graduation and who present the most important questions for welfare and labor policy. If NLS was intended to be a study of college education or employment, then the sampling frame should have been built on the appropriate units. It was, in fact, constructed on secondary school graduates. The design of NLS is adequate for answering questions about secondary school education, and this should be the acid test for proposed questionnaire items and data analyses: will the results tell us how to improve secondary schools? The three R's, viz., Rosenberg, Rotter, and Rokeach, will tell us nothing about building better schools. Neither will general questions about sex-roles, political activity, or race relations for which the causal nexus with high school resources and experiences is hopelessly lost in the confounded relationships of the non-experimental survey.

The proper role for NLS is to attempt to provide descriptive data on the pressing policy questions and the incipient policy issues that will effect secondary schools. These issues include the obvious "hot topics" such as equality of opportunity (curricular and extra-curricular), bussing, ..., plus less visible issues such as "stopping out," student rights, ... Transition matrices, simple percentages of item responses, and cross-tabulations are the analytic techniques sufficient for reporting data on the circumstances and opinions of respondents.

In lieu of defensible statistical procedures for linking adult life circumstances to secondary school experiences, the survey respondents should be used as informants on the impact of their high school experiences on their current work, educational, family, leisure, and cultural lives. The context of the questions should be retrospective and evaluative (e.g., "Do you feel that your high school teachers and counselors gave you sufficient encouragement to acquire job skills?"). To label such data "soft" is pejorative, mere sloganeering, and inconsistent. Such items as #142 on the Second Follow-up Questionnaire ("What kind of work will you be doing when you are 30 years old?") are "prospective" by ten years, whereas what is being suggested here as preferable content for NLS is retrospective by only two or three years. Two years, four years, ten years after high school, what does the class of '72 say about its secondary school experiences? What problems are they experiencing for which high school left them ill-prepared? What school opportunities do they regret not having taken? What problems do they face in finding a job, raising their children, using their leisure time satisfactorily that schools could have prepared them to solve? By treating the respondents as credible informants on the adequacy of their high school experiences, NLS stands to learn something that can help us restructure schools. By treating the class of '72 as data points in a linear model, NLS is in danger of piddling away several million dollars of what little we invest to study schools.

Financing Post-Secondary Education -- Lawrence Gladieux

I recognize that this area is perhaps a secondary focus of the NLS project, one of a number of research concerns that have been folded into the instrument and the proposed analyses in recent years though not really central to the original NLS aim of tracing high school effects.

I would argue, however, that the data growing out of NLS that tell us something about postsecondary student finance may be the most directly policy-relevant dimension of the entire survey -- at least so far as Federal policy is concerned. Aid to students rather than aid to institutions is the current focus of Federal policy toward postsecondary education (and increasingly of state policy as well, though operating subsidies for public institutions tend still to be the predominant mode of state support for higher education). Expenditures for need-based Federal student loan, grant and work programs have burgeoned, tripling since the late 60's and doubling since passage of the Education Amendments of 1972. While seven or eight years ago student aid was just one of an array of categorical aids for higher education, it now accounts for about 90 percent of the Office of Education's investment in this field and about a third of OE's total budget.

Big dollars are involved -- over \$2 billion annually in OE-sponsored student aid programs, plus a few billion more under the GI Bill, Social Security, LEAA and health professions.

I am not arguing relative priorities within the NLS. Other valid goals of the project have to be weighted in light of resource constraints. This is just a bid for careful follow-through to make best use of the NLS potential for illuminating student assistance patterns and behavioral effects.

As an instrument of Federal policy, need-based student aid is relatively new -- unlike, for example, Federal support for vocational education. The major programs are now being given the test of experience. But eventually the same fundamental questions will be asked of student aid as are being pressed with respect to vocational education: Does it work? How effective is it in achieving public policy objectives? What is the relative effectiveness of alternative financial aid schemes? The NLS gives us a longitudinal data source on the basis of which we may be able to produce some answers. At the very least it will enable us to describe financial aid offers and awards. We need to know how aid is packaged and for whom -- something that has been difficult to pin down because the financial aid process is so decentralized. The NLS provides the type of survey data that is needed to fill the gap.

Moreover, NLS may help shed light on the behavioral effects of student assistance. Student aid affects the actual price of higher education that students must pay, but we know essentially very little about how enrollment (and persistence) behavior is altered as a result.

Recent efforts to develop "demand models" for higher education to probe this question have been severely limited by the inadequacy and oldness of the data bases. When combined with certain other available data sources (like HEGIS institutional characteristics), the NLS should provide a unique data base for analyzing student responsiveness to price change brought about by student aid. The relationship is complex and we may never be able to sort out adequately all of the variables, but the effort should be made in order to provide a stronger analytical basis for future Federal and state postsecondary financing policies. Work in progress under our (CEFB's) contract with NCES to analyze student financial aid patterns should help to chart directions for such research.

Analysis Plans -- Lawrence Gladieux

First, I think there are big problems with the proposed investigation of college proximity and rates of college attendance. Above all, the plan takes no account whatever of student responsiveness to price and the availability of financial aid. It is a static analysis which overlooks the one short-run instrument of public policy -- student financial aid -- that presumably has some kind of influence on student decision-making about college. This seems to be an exercise that would produce a series of tables that tell us predictable things with little if any bearing on public policy. Five or six years ago there was considerable talk about college proximity and

the need for broad Federal support to underwrite the further expansion of community colleges to bring them within commuting distance of all students. But with the transformation of the college market and the levelling off of enrollments since the late 60's, this talk has faded. Proximity as an issue or as a potential focus of Federal concern is simply no longer a part of the policy debates.

The proposed "comparative analysis," charting trends related to equality of educational opportunity, seems to me very worthwhile. I would suggest, however, looking at several other data sources besides Project Talent that would provide additional benchmarks over the past 15 years -- SCOPE (1966), PSAT Norms (1968) and the Census.

Summary of Recommendations from the Panel

In efforts such as these it is frequently difficult to provide meaningful assistance and useful advice when each of us brings to the planning conference table different values, different priorities and different interests. The panel had close ties to social science research, to educational research, to federal and state organizations like CEEB and NIE. After several hours of reading and preparation for the meeting, and after long hours of discussion at the conference, the panel presented its preliminary set of recommendations for RTI/NCES personnel.

After a month's passage of time each panelist has had an opportunity to re-think his positions and his ideas on how to improve NLS. A reading of the final papers reveals that the recommendations remain essentially the same as those submitted in October. Each one is listed below and explained.

1. Descriptive data, arranged and displayed in straight forward and helpful fashion, should be made available to users in a timely fashion.

The advice of the panel seems clear. Get descriptive data into the hands of researchers and users quickly. Don't wait for finely tuned analyses and procedures before

sharing the data tapes with college research and development centers and contractors. Be sure that users can read and understand the data once it is ready for their use. Take steps to increase the availability of tapes to appropriate groups.

2. The contractor should have clearer, more explicit guidance on research priorities for the project.

NLS can't be all things to all people. The existence of a national sample of seniors of the class of 1972 provides strong temptation to a variety of research and to all kinds of studies. Answering questions of interest to a variety of federal and state agencies, to colleges, and to private research groups is interesting--even helpful--but may detract from the study's original and central purpose to study secondary schools by following a sample of graduates over a long period of years. Can contract managers negotiate the many, often competing, claims of various agencies and give consistent guidance to the contractor so that, over a period of years, the direction, the purposes, and the study remain on course and targeted on appropriate objectives? Side issues and diversions should be carefully explored, defined, and specified before they are allowed to be added to the study, regardless of how attractive and interesting they may be.

3. Several analysis planning seminars should be funded to focus attention on analysis issues and concerns.

Once priorities are more clearly defined, several seminars should be scheduled to ensure that interested and knowledgeable researchers from all fields are introduced to the NLS data and that their expertise is brought to bear on research questions and problems. The sessions should be free of deadlines such as those associated with field testing efforts. The seminars might also be better if scheduled after descriptive data are available.

4. NCES personnel who monitor NLS contracts should provide more guidance and assistance with analytical issues and problems.

As the study continues, the data bank becomes a rich storehouse of information. Users and contractors need assistance in understanding the analytical procedures employed by others. It is also essential for the contract monitors to know and understand enough about proposed techniques to assure that contractors are delivering products as specified in the various contracts.

5. The merging of appropriate data from the census, from HEGIS, and from the Dictionary of Occupational Titles with the NLS data should be explored.

Merging of complementary data would extend and expand interpretive studies and yield valuable additional insight into educational problems. Such suggestions would, of course, necessitate additional resources. Such merging of data streams would require meticulous planning and should be thoughtfully implemented.

6. Several additional areas merit serious consideration.

- (a) Items on spouses would add interesting and helpful dimensions.
- (b) More specific information is needed on financing higher education, on financial aid, and on any discrimination involved in administering financial aid programs.
- (c) Review labor market design to make it consistent with Current Population Survey.
- (d) Use multiple forms to expand measures of sex roles, racial, attitudes and personal characteristics of respondents and spouses of respondents.
- (e) If values are imputed or developed synthetically, include actual components.
- (f) Obtain more information about job-seeking activities.

The time and efforts of the panel members will have been well spent if helpful suggestions have emerged from our deliberations and our papers.

National Longitudinal Study
Planning Conference Attendees
October 1-3, 1975

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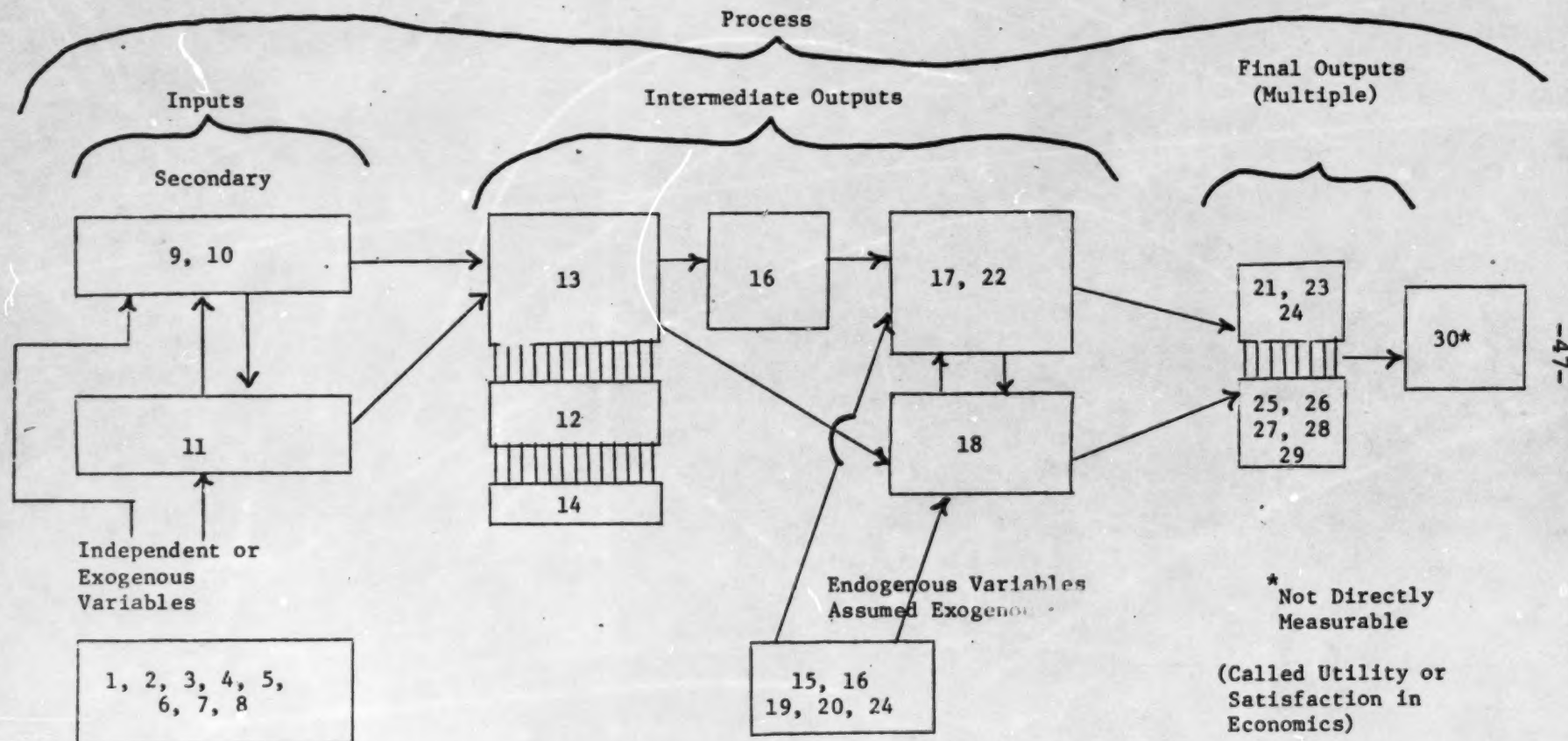
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Statement of Purpose

This Planning Conference is one in a series of such conferences which have provided continuous guidance for the development of the National Longitudinal Study. Each conference has focused on particular aspects of the study relevant at the time of the meeting. The specific purposes of this meeting are:

1. Examine the proposed third follow-up NLS field test questionnaire and make recommendations as to its relevance and applicability to the on-going study, in particular considering the breadth, scope, continuity, and content of the questionnaire.
2. Develop a set of analytical goals and priorities for third follow-up data analyses which build on and extend prior analyses.
3. Provide recommendations relative to second follow-up data analysis.

CONCEPTUAL MODEL OF EDUCATIONAL/LABOR FORCE PARTICIPATION SYSTEM



From: Ernst Stromsdorfer

(numbers apply to Figure I on next page) Please note: Figure I has been eliminated due to marginal legibility.